CHALMERS

BEST PRACTICE IN PUBLISHING @ CHALMERS

A guide summarizing important aspects of scientific publishing

By the department of Communication and Learning in Science
Assigned by the Vice President of Research and Research Education.

Contents

1. Introduction

Scientific publishing is one of the key steps in the research process, in which you disseminate the results, possibilities and consequences of your research. Publishing is meriting, not only for you as an individual, but also for your research group, division, department, and university.

Chalmers research spreads throughout the world in many ways and through different channels; peer reviewed journals, conference proceedings, books and book chapters, professional magazines/trade journals, newspapers, TedTalks, workshops with stakeholders, etc. In this way Chalmers reaches important stakeholders and audiences in academia industry and other parts of society, policy makers, and funding agencies.

This set of recommendations offers a best practice in publishing to Chalmers researchers. It is based on many years of support to researchers and managers at Chalmers, giving publishing advice and performing bibliometric analyses. It is also benchmarked with similar guidance given at other leading universities. The recommendations do not aim to cover all above-mentioned aspects of scholarly communication, but primarily focuses on important elements to consider, while planning for, submitting and disseminating publications in scientific journals or conference proceedings.

2. Overall principles for publishing @ Chalmers

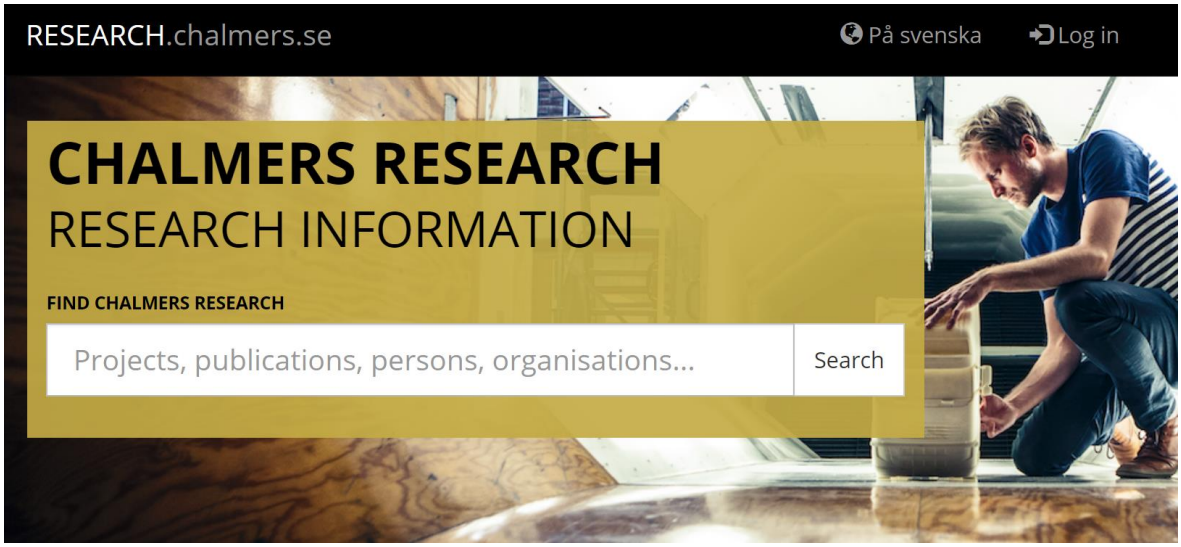
2.1 Strive for Quality before Quantity

Our experience working with and studying academic publishing, has taught us that there is a set of principles that enhances the quality of publishing and the dissemination of research results.

First, aim to publish all research output – from pure academic work as well as from collaboration with partners in industry or society – in high quality channels. Publishing in a well-established and prestigious journal helps you reach your target audience and maximises spread in the scientific community. Publishing a series of so called 'smallest publishable units', to get as many publications out of a set of data as possible, is generally advised against. Such publications risk to lose their context and disappear in the highly competitive world of scientific publishing. High quality research takes time, as does high quality publishing.

2.2 Disseminate your research via *research.chalmers.se*

Chalmers' research portal, *research.chalmers.se*, which provides Chalmers' researchers with a platform for gathering information about their research and making it available to the world. By covering Chalmers research publications and dissertations from 2004 and onwards, as well as externally funded research projects from 2012 and onwards, it is an important channel for spreading new knowledge from Chalmers and supporting open access. The coverage for recent research output has normally a delay of a few months, depending on the speed of indexing in the source databases (*see below*).



New research publications from Chalmers are automatically imported from the databases Scopus (maintained by Elsevier) and Web of Science (maintained by Clarivate Analytics) and quality-controlled by librarians. Chalmers researchers are then encouraged to verify and/or edit their own output in *research.chalmers.se*, which includes adding full-text files, as well as tagging publications with e.g. information about connections to specific research projects, to Areas of Advance, and to

any of Chalmers infrastructures, thereby enriching the system and contributing to increased data content, quality and traceability.

research.chalmers.se is a rich source of data that is used to analyse Chalmers research output, e.g. through calculations of bibliometric indicators for evaluation and follow-up.

research.chalmers.se is also part of the global research information eco-system, and its metadata is delivered e.g. to the Swedish national publication database Swepub, and fetched and indexed by Google, Yandex and Baidu[1], increasing your visibility further.

Locally at Chalmers, records added to *research.chalmers.se* also populate your personal staff or departmental web pages with your recent research output.

In addition to metadata about your publications in *research.chalmers.se* being used and reused, every open access publication uploaded to the system adds to improved access to your research output, e.g. by getting it indexed in Unpaywall[2] and Google Scholar.

2.3 Bibliometrics as a proxy for quality and impact

Bibliometrics involves measuring the number of peer reviewed publications by a certain group of authors and the number of times these are cited, and assumes that the more citations a publication receives, the greater the impact it has. Bibliometrics methods are used to measure scientific impact as well as analysing publishing patterns and collaboration networks.

In 2004, Chalmers started using bibliometrics as a tool for yearly analysis of the publication output. Since then, the division of Research Support, Bibliometrics and Ranking (RBR) provides Chalmers management with regular bibliometric analyses and follow-ups using publications data from *research.chalmers.se*, in combination with the benchmarking tool SciVal[3].

For guidance on how to use metrics responsibly, Chalmers turns to the guidelines for responsible bibliometrics of the Centre for Science and Technology Studies (CWTS)[4] at Leiden University, and the principles written in the Leiden manifesto for research metrics[5][6]. These are widely accepted principles, guiding the research community in how to perform bibliometric analyses and communicate the results responsibly, and to rely on expert judgement rather than data alone. The Leiden manifesto has been adjusted to fit Swedish conditions by The Association of Swedish Higher Education Institutions (SUHF)'s working group for bibliometrics[7]. Representatives from RBR participated in writing the SUHF guiding principles, which range from using bibliometric variables as part of a broader portfolio of variables, to realising that bibliometric results are not statistically reliable or stable at too small sample sizes.

[1] Baidu is currently the fourth most used search engine in the world (after Google, Yahoo! and Bing), and Yandex is the fifth most used search engine in the world. Baidu has a Chinese speaking audience, and Yandex a Russian.
[2] Unpaywall is an addon to web browsers allowing its users to allocate freely available research. As of today (august 2019) it contains over 23.000.000 open access files. http://unpaywall.org/
[3] https://scival.com/
[4] https://www.cwts.nl/pdf/CWTS_bibliometrics.pdf
[5] http://www.leidenmanifesto.org/
[6] Hicks, D., Wouters, P., Waltman, L., De Rijcke, S., & Rafols, I. (2015). Bibliometrics: The Leiden manifesto for research metrics. *Nature, 520*(7548), 429-431. doi:10.1038/520429a
[7] https://bibliometriforum.files.wordpress.com/2017/04/rc3a5d-utvc3a4rderande-bibliometri_161202.pdf

3. Recommendations for publishing

Publish in peer-reviewed journals and conference proceedings that are indexed in Scopus or Web of Science

Publishing practices vary between research fields. Generally, you should aim at getting read, cited and published where your publication is likely to be found by your fellow researchers. Journals and conference proceedings indexed by Scopus or Web of Science are quality-controlled publication channels in which researchers usually search for and read publications. Moreover, publications in these journals and proceedings are in general the only ones included in bibliometric analyses.

Consider whether publishing in a conference proceeding is indeed the most strategic first step within your field. In case you plan to publish a conference paper and later rework and submit it to a journal, you should communicate with the journal's editor before submission.

If you aim for your book to be indexed by Scopus or Web of Science, check the scope and selection criteria of the databases before you start writing.

Do not publish in questionable journals – it is a waste of time and other resources

The number of predatory journal publishers and conferences increase steadily, exploiting the open access publishing model. As the name shows, the journals are not legitimate. They lack genuine editorial boards and do not follow editorial or ethical standards in academic publishing.

Publishing in predatory journals may have far-reaching consequences for both the individual researcher and her or his university. Also, using information from and citing results in predatory journals can be problematic, as the articles are not adequately peer reviewed. [8],[9]

Use tools for choosing and assessing journals

CWTS Journal Indicators provides free access to bibliometric indicators on scientific journals for over 20,000 journals indexed in the Scopus database. One of CWTS key indicators is the SNIP (Source Normalised Impact per Paper), which measures the average citation impact of the publications of a journal. Unlike the journal impact factor of Web of Science, SNIP corrects for differences in citation practices between scientific fields, thereby allowing for more accurate between-field comparisons of citation impact.

Manuscript matcher allows you to browse, search, and explore journals indexed in the Web of Science.

The JournalGuide tool assists to evaluate scholarly journals. In addition to searching by journal title, category or publisher, authors can use the title and abstract of a manuscript to discover which journals publish articles on similar topics. This tool often includes information on aim and scope, speed, cost, and open access policy. The site lists the SNIP value for each journal.

[8] Bohannon, John (2013). Who is Afraid of Peer Review? *Science*, vol. 342, issue 6154, pp. 60-65, doi: 10.1126/science.342.6154.60

[9] Beall, Jeffrey (2012). Predatory publishers are corrupting open access. *Nature*, vol. 489, issue 179, doi: 10.1126/science.342.6154.60 10.1038/489179a

EndNote Web helps you find journals for your manuscript based on title, abstract and the reference list.

JANE (Journal/Author Name Estimator) compares the title and abstract of your manuscript with millions of documents available in PubMed and suggests both matching journals and authors. You can also search using keywords.

Springer – Journal Finder, Elsevier – Journal Finder, SJFinder – Scientific Journal Finder, Edanz - Journal Advisor are similar tools for finding the best fit for your manuscript.

thinkchecksubmit.org is an overall good source of knowledge when planning for your publications. It also helps you identify trusted journals in your research discipline.

There are several lists of which journals and conferences to avoid. We subscribe to and use Cabell's black list. To check for predatory conferences, you can visit *thinkchecksubmit.org*.

3.1 Open Access

When you publish Open Access, you make your publications freely available to your research community, professionals within your field, policy makers and society at large. Everyone gets a chance to make practical use of your research. Furthermore, studies[10] show that open access articles are cited more often than locked-in articles.

Strive to publish open access

Publicly funded research, its publications and underlying data, should be as findable, accessible, interoperable and reusable (FAIR) as possible to humans as well as machines. In 2016, the Swedish government stated in their research bill to the parliament – *Kunskap i samverkan – för samhällets utmaningar och stärkt konkurrenskraft, Prop. 2016/17:50* [11] – that the goal is to make all research output openly available by 2026. Concurrently, they gave the Swedish Royal Library (KB) the assignment to coordinate the development towards such open access.[12] To ensure that Chalmers' scientific results are disseminated as widely as possible, the President of Chalmers introduced an Open Access Policy in 2010. The recent policy, from 2023, is still under implementation [13]. The policy is in accordance with the Berlin Declaration on Open Access to Knowledge in the Sciences and

[10] Gargouri, Yassine, et al. (2010). Self-selected or mandated, open access increases citation impact for higher quality research. PLoS ONE, vol. 5, issue 10. e13636, doi: 10.1371/journal.pone.0013636
[11] *Knowledge in Cooperation - for society's challenges and strengthened competitiveness, Prop. 2016/17:50* [Sic. authors' translation from Swedish] https://www.regeringen.se/rattsliga-dokument/proposition/2016/11/prop.-20161750/
[12] In Swedish: https://www.mynewsdesk.com/se/kungliga_biblioteket/pressreleases/hur-blir-svensk-forskning-mer-tillgaenglig-och-aateranvaendbar-2841826
[13] *God forskning på Chalmers*, https://c360.chalmers.se/locator/DMS/Case/Details/Simplified/61000?subtype=61000&recno=566831&module=Case&VerID=566766

Humanities to which the Association of Swedish Higher Education (SUHF) is a signatory, and the requirements of an increasing number of research funding bodies.

Find and choose open access journals

The DOAJ (Directory of Open Access Journals) website lists fully open journals. **If you use the DOAJ to find and choose a journal, make sure that journal is also indexed by Scopus or Web of Science.**

In addition, Chalmers has agreements with several publishers that offer a discount for publishing in their journals.

Make publications open access through *research.chalmers.se*

According to Chalmers Open Access policy, all research published by Chalmers' researchers must be made available immediately in Chalmers research portal (see section 2.1), no later than 12 months after publication. In practice, this means that researchers at Chalmers must submit a full-text copy of all their publications in an electronic form to *research.chalmers.se*.

3.2 Research data management

In the context of open science and research data management, the term research data refers to digital data that has been collected or produced for scientific purposes. Research data may be numerical, textual, images, video or sound recordings. It may also be software code.

Because of judicial restrictions, it is not always possible to make research data openly available. A general recommendation is to make data as open as possible and as closed as necessary.

What are the incentives for sharing data? When you share research data, you enable fellow researchers and reviewers to validate and test your results. Furthermore, sharing research data is a way of using resources more effectively, as one dataset may be reused by other research groups. Working on the same sets of data may in turn inspire new collaborations between research groups, nationally as well as internationally.

In terms of preservation and data security, correct data management enables data to be saved on approved, secure servers, provide backup for your own storage, thereby safeguarding data for future use.

Swedish National Data service (SND) and Chalmers Data Access Unit (DAU)

The SND network consists of the Swedish higher education institutions and public research institutes that have agreed to create local units for managing research data (Data Access Units, or DAUs). The main task for a DAU is to assist researchers in their respective organisation in making research data as accessible as possible, in accordance with the FAIR data principles (Findable, Accessible, Interoperable, and Re-usable). This includes to offer training and support to researchers in data management and accessibility, as well as to publish the researchers' metadata in SND's national research data catalogue, and to ensure secure storage of the data.

Want to get in touch with Chalmers Data Access Unit (DAU)? E-mail: dau@chalmers.se.

Funders' and publishers' demands

Because of the advantages of making data openly accessible, funding agencies increasingly require a data management plan (DMP) as part of the project application. Also, an increasing number of publishers require datasets to be deposited along with the article (e.g. Nature) or ask for a statement on the authors' willingness to share data. The European Union has launched an Open Research Data Pilot[14] as part of the Horizon 2020 program, to increase access to publicly funded research.

As of 2019, those of you who are awarded a grant from the Swedish Research Council must have a plan for how research data, collected and produced within your project, shall be managed. For more information on funders' requirements, contact Chalmers Grants Office or consult the website SHERPA/JULIET, where research funders' data archiving policies are listed.

Write a Data Management Plan (DMP)

Write a data management plan at the start of each research project, to define what will happen to your research data during and after your research project. When data is well organised, structured and documented your data may be reused, shared and preserved. Also, writing a DMP enables you to make all juridical implications of sharing data clear early in the project.

Here are some useful links to guides and templates for DMPs:

- Checklist for Data Management (Swedish National Data Service, SND)
- Checklist for a Data Management Plan (Digital Curation Centre, DCC)
- Guidelines on Data Management in Horizon 2020 (EC)
- Framework for Discipline-specific Research Data Management, (Science Europe)
- DMPonline (DCC)Tool for DMP creation, templates for EU and ERC are available.
- Template for the Data Management Plan [ODT format]
- ERC template for the Data Management Plan [ODT format]

Find your data repository

Chalmers recommends the following services:

- Swedish National Data Service (SND), together with Chalmers Data Access Unit (DAU), offer support and storage to Chalmers researchers. When you deposit a dataset through SND, it is curated and published by Chalmers DAU.
- The online repository Zenodo (European Commission's OpenAIREplus project), welcomes all researchers to preserve their research data regardless of size and format.
- re3data.org is a global registry of research data repositories that covers repositories from different academic disciplines.

[14] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

Publish and cite data

The praxis of publishing and citing datasets creates a formalised system of recognition and reward to data producers. When you cite data, you allow for it to be located and accessed for replication and verification of your results. You thereby improve the overall transparency of your study design.

When you deposit data in a Core Certified Repository[15], it gets a persistent identifier (PID) that you can refer to in your publication. A PID makes the dataset both citable, and findable even if the data is moved to a new web address. There are many types of PIDs, but Digital Object Identifier (DOI) is the most widely used.

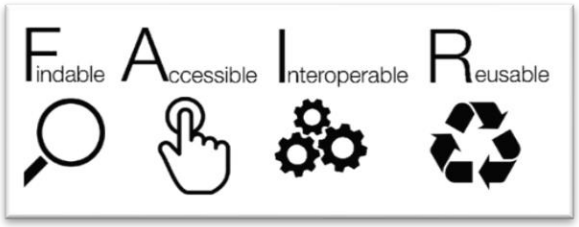
Data is cited the same way as other information sources and a citation should include; author, title, year of publication, version, data archive and DOI, e.g.:

> Barber, L.B., Weber, A.K., LeBlanc, D.R., Hull, R.B., Sunderland, E.M., and Vecitis, C.D., 2017, Poly-and perfluoroalkyl substances in contaminated groundwater, Cape Cod, Massachusetts, 2014-2015 (ver. 1.1, March 24, 2017): U.S. Geological Survey data release, *https://doi.org/10.5066/F7Z899KT*.

Be FAIR!

The FAIR principles were created to ensure that research data can be discovered, accessed, integrated and reused by humans and machines. They are widely adopted by publishers, data repositories and funding agencies, including the European Union.

The FAIR acronym stands for Findable, Accessible, Interoperable and Reusable.



Picture: Sangya Pundir, Wikimedia Commons CC BY-SA 4.0

The FAIR data self-assessment tool enables you to assess the 'FAIRness' of a dataset and gives advice on how to enhance it. The tool poses questions related to the principles and returns an overall rating of the FAIRness of the dataset for each principle.

3.3 Use Chalmers affiliation correctly

Most publications from Chalmers are published with the correct affiliation, but in case you leave out Chalmers, misspell something, or use obscure abbreviations in the address, Scopus and Web of

[15] https://www.coretrustseal.org/about/

Science may not be able to identify you as a researcher at Chalmers, meaning that the publication will not be imported to *research.chalmers.se* or counted towards Chalmers (or your) publication output.

Everyone who has an active Chalmers ID (CID), who are not employed by Gothenburg University, should publish using a Chalmers affiliation

Use the full name of Chalmers in the address, i.e. Chalmers University of Technology, without abbreviations. Include both the department and university in the author's affiliation address. For example:

> Department of Electrical Engineering
> Chalmers University of Technology
> SE-412 96 Gothenburg, Sweden

Researchers employed by the Department of Mathematical Sciences at Gothenburg University are exceptions to this rule. All researchers at the Department of Mathematical Sciences of either Chalmers and Gothenburg should use the following affiliation:

> Department of Mathematical Sciences
> Chalmers University of Technology and the University of Gothenburg
> SE-412 96 Gothenburg, Sweden

Researchers at Onsala Space Observatory should use the following affiliation:

> Department of Space, Earth and Environment
> Chalmers University of Technology
> Onsala Space Observatory
> SE-439 92 Onsala, Sweden

If any part of the research presented in the publication was done at Chalmers, and you have previously had a CID from Chalmers**,** you should mention both your affiliation with Chalmers and that with your current organisation.

Always use the e-mail address provided to you by Chalmers, i.e. name@chalmers.se

3.4 Unique author IDs

Inconsistent name abbreviations and writing styles are common problems in trying to uniquely identify researchers and attribute publications to the right person. Also, names may change (for example through marriage), have cultural differences in name order, etc. This leads to difficulties tracking individual researchers' output and performance and you, as an individual researcher, risk not getting due credit for your work.

Ensure output traceability through name consistency and author identifiers

To ensure output traceability, consistently use the same version of your name, including the same abbreviations, throughout your academic career. To unify any different name variations, and to collate your research output, you may also *register* and *maintain* the following identifiers:

- ResearcherID and Scopus Author ID are used to identify authors in Web of Science and Scopus, respectively, providing individual author profiles, comprising lists of publications and individual metrics. ResearcherID is created manually, and Scopus Author ID is created automatically once you have a publication in the Scopus database. Check your Scopus author ID regularly. For information on how to correct your Scopus author ID, follow the link above. Both identifiers can be registered as sources of data for your ORCID (*see below*).

- ORCID (Open Researcher and Contributor ID) is an international, open register of identifiers for scientific and other academic authors and contributors. ORCID enables you to connect and present your publications, datasets, awards, and affiliations in one place. Using ORCID may speed up and help application processes, and some publishers embed your ORCID into article metadata and will request it. Visit *orcid.chalmers.se*. This site offers researchers help with creating an ORCID and connecting it, or an existing ORCID, to the local IT systems at Chalmers.

3.5 Authorship and other ethical standards

As there are significant differences in publication practice between disciplines, there are no universally accepted standards for assigning authorship. Unfortunately, concerns and disputes about who should be the authors of a publication arise quite often, which has resulted in the widely accepted and general *Vancouver recommendations*[16].

Follow the Vancouver recommendations for conducting and publishing research

These recommendations include defining the role of authors, contributors and non-author contributors. They also cover responsibilities in the submission and peer-review process, conflicts of interest/competing interests, protection of research participants, etc.

The Vancouver recommendations define an author of a scientific publication as a person who has:

- Contributed substantially to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and

- Drafted the work or revised it critically for important intellectual content; and made a final approval of the version to be published; and

- Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

[16] http://www.icmje.org/recommendations/browse/roles-and-responsibilities/

For more information on publication ethics, we recommend consulting with the Committee on Publication Ethics (COPE). For handling authorship disputes, explore Authorship and contributorship.

3.6 Academic social networking sites

The more links there are to a publication from different social media sites, the higher the chance that the publication will appear at the top of a search engine result. It is difficult and time-consuming to be present on all sites. However, you can choose one or a couple that suit your needs and purposes.

Network and stay up-to-date at academic social networking sites

Academic social networking sites facilitate self-promotion and acquisition of professional knowledge and make interaction with peers easier.[17] It is a good way to keep up to date with current events within your field of research, including the latest publications, the current quality of specific journals, etc.

Academia.edu (94+ million researchers) and ResearchGate (15+ million researchers, including 68 Nobel Laureates) are well known among researchers. A study published in PLoS ONE found that papers uploaded to Academia receive 51% more citations after 3 years and a 69% boost in citations over 5 years. [18]

On these sites you may upload your publications, abstracts, and links, and connect to other researchers. Check SHERPA/RoMEO for publishers' current copyright- and self-archiving policies regarding published manuscript. Also, you receive updated information about fellowships, grants, and project calls.

When you have set up an account, you are notified when cited, mentioned, referenced, thanked, or acknowledged in a publication, enabling you to keep track of who reads, downloads, shares or discusses your publications.

Maintain a Google scholar profile

Consider registering for a Google Scholar profile to collate your publications and keep track of citations to them. Google Scholar is an influential alternative to Web of Science and Scopus, and a Google Scholar profile can be viewed as a combination between an author ID and an academic social

[17] Meishar-Tal, Hagit & Pieterse, Efrat. (2017). Why Do Academics Use Academic Social Networking Sites? *International Review of Research in Open and Distance Learning*, vol.18, issue 1, doi: 10.19173/irrodl.v18i1.2643.

[18] Niyazov, Yuri & Vogel, Carl & Price, Richard & Lund, Ben & Judd, David & Akil, Adnan & Mortonson, Michael & Schwartzman, Josh & Shron, Max. (2016). Open Access Meets Discoverability: Citations to Articles Posted to Academia.edu. *PLoS ONE*, vol 11, issue 2, e0148257, doi: 10.1371/journal.pone.0148257

networking site. Once you have created a profile, it is important to maintain it as the automatic updates are not always accurate.

3.7 Recognition for Peer Review activities

Track and get recognition for peer review activities

To get recognition for your contribution to peer review processes, consider signing up for a Publons account. Publons, which is part of the Web of Science group, helps you to keep track of your performed peer reviews as well as manuscripts handled as an editor of a journal. You can use information from your Publons profile for funding applications, career advancement, tenure, fellowships, and even working visas. Over 630,000 researchers are using Publons.

4. Want to know more? Contact us!

bibliometrics.lib@chalmers.se	Bibliometrics. Strategic publishing (including journal selection, academic social media network sites, predatory journals and conferences). Publishing ethics.
research.lib@chalmers.se	Registration and publishing in *research.chalmers.se.* Open science (how to publish open access, open access agreements with publishers, open access costs and funding).
dau@chalmers.se	Research data management. Funders' requirements. How to make research data FAIR (Findable, Accessible, Interoperable, Reusable).

If you are not sure where to turn with your questions, choose one of the addresses above and we will forward it to the right people.

Best Practice in Publishing @ Chalmers, Version: 1.1, 2023-05-15

The department of Communication and Learning in Science got the assignment in 2018 from the Vice President of Research and Research Education to summarize important aspects of scientific publishing. This document is the result.

Checklist

- ✓ Publish in journals/proceedings that are indexed by Scopus or Web of Science.
- ✓ Make your publications open access through *research.chalmers.se.*
- ✓ Follow the Vancouver recommendations for highest ethical standards.
- ✓ Use and maintain authors identifiers (researcher ID, Scopus ID, ORCID).
- ✓ Make sure to use Chalmers affiliation correctly.
- ✓ Check your publication in research.chalmers.se and tag them with appropriate projects and e.g. Areas of Advance and Excellence Initiative.
- ✓ Write a data management plan (DMP).
- ✓ Publish and cite research data.
- ✓ Increase visibility and impact through academic social networking (ResearchGate, academia.edu, etc.).